REMARKS

Careful consideration has been given to the Official Action of November 24, 2006 and reconsideration of the application is respectfully requested.

To overcome the Examiner's objection to the Abstract, the reference to Figure 1 has been deleted therefrom.

Claim 1 has been amended to distinguish more clearly over the cited art as will be discussed below. This amendment is fully supported by the original application, particularly in Figs. 1, 3, and 4, which unambiguously show that the insert is fully embedded within the seal member. Furthermore, the recitation "an insert located inside said annular member" was the English translation of the Italian recitation "un inserto disposto all'interno del detto elemento anulare" which includes in Italian only the possibility of being "fully embedded within".

Claims 11-14 have been added, and support for these claims can be found at page 5, lines 8-12.

Accordingly, claims 1-14 are now presented for consideration.

Claims 1-6, 8-10 are rejected by the Examiner under 35 USC 102(b) as being allegedly anticipated by US Patent No. 6,276,255 (Takeda et al.).

Claim 7 is rejected by the Examiner under 35 USC 103(a) as being unpatentable over Takeda et al. in view of US Patent No. 5,984,316 (Balsells).

The claimed invention is patentable over Takeda et al. and Balsells, taken singly or in combination, as will be discussed hereafter.

Claim 1 recites two seals, each of which comprises an annular member made of a first material having a first coefficient of thermal expansion and an insert **fully embedded within** the annular member and made of a second material having a second coefficient of thermal expansion lower than the first coefficient.

By providing the insert having a coefficient of thermal expansion lower than the coefficient of thermal expansion of the annular member within the annular member, **the difference between the coefficient of thermal expansion of the seals and that of the shaft and the casing of the ball screw is relatively small** (page 5, lines 8-12 of the description).

Thus, **in relatively low operating temperatures, the seals contract substantially the same as the shaft and casing, and therefore do not shrink onto the shaft**; conversely, in relatively high operating temperatures, the seals expand substantially the same as the shaft and casing, thereby preventing lubricant leakage from the chamber.

Takeda et al. disclose two seals 20 each of which comprises (column 4, lines 51-60) an annular seal member 21 made of a synthetic resin material and two spring rings 22 fitted to

relevant outer periphery grooves 210 of the annular member 21 so as to clamp the annular seal member 21 toward the center.

Thus, **Takeda et al. do not disclose any insert fully embedded within** the annular seal member 21. In contrast with the claimed invention, Takeda et al. disclose fitting the spring rings 22 to respective grooves 210 which are provided on the outer periphery of the annular seal member 21. Indeed, as clearly shown in Figs. 4, 6, 10A and 10B, the grooves 210 form openings around the periphery of the annular seal member 21 and the periphery of the spring rings 22 are exposed around the periphery of the annular seal member 21.

Therefore, even if the spring rings 22 were made of a material having a coefficient of thermal expansion lower than the coefficient of thermal expansion of the annular member 21, **the difference between the coefficient of thermal expansion of the annular seal member 21 and that of the shaft and the casing of the ball screw is not reduced**. Owing to the above, **in relatively low operating temperatures the annular seal member 21 would contract according to its own coefficient of thermal expansion and thus more than the shaft and casing of the ball screw. Accordingly, the annular seal member 21 would shrink onto the shaft** exactly as discussed in the background of the invention of the present application (page 1, line 19-page 2, line 8).

With respect to claim 6, the Examiner alleged that Fig. 4 of Takeda et al. indicate with cross-hatching that the spring rings 22 are metal. However, it is respectfully submitted that Takeda et al. do not teach or suggest the material of the spring rings 22.

MPEP 2125 states that "Drawings and pictures can anticipate claims if they clearly show the structure which is claimed. *In re Mraz*, 455 F.2d 1069, 173 USPQ 25 (CCPA 1972). However, the picture must show all the claimed structural features and how they are put together. *Jockmus v. Leviton*, 28 F.2d 812 (2d Cir. 1928)."

Takeda et al. do not disclose in the description that the spring rings 22 are metal, and do not clearly show the structure which is claimed because spring rings 22 are inconsistently illustrated using cross-hatching in the section views of Figs, 4, 7, 10A, and 10B, but are not illustrated using cross-hatching in section views of Figs. 6 and 9. It is noted that spring rings 22 are illustrated with the same cross-hatching in Fig. 5, but Fig. 5 is not a section view. Furthermore, annular seal member 21, which is explicitly disclosed by Takeda et al. as being made of resin material, is not illustrated as such using cross-hatching in the section views, but is illustrated using cross-hatching (metal) in Fig. 3. These inconsistencies make the drawings of Takeda et al. unclear as to the claimed structure.

Balsells was cited for disclosure of an O-ring housed in an annular recess for the purpose of providing a secondary static seal between a seal ring and a housing. However, Balsells also does not teach or suggest an insert fully embedded within an annular member as required by the claimed invention.

Inasmuch as neither Takeda et al. nor Balsells disclose the claimed insert fully embedded within the annular member, their combination cannot, either.

In view of the above action and comments, it is respectfully submitted that the application is in condition for allowance, and favorable reconsideration of the application as amended is earnestly solicited.

Respectfully submitted,

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